Diverse in habitat, rich in history, with exquisite panoramic views

Education and Research at the NAP

Educational research is encouraged at Columbia Hills NAP. Schools and professionals use the site as an outdoor classroom. Current research at Columbia Hills NAP is centered on the rare and endemic plants of the area, including annual monitoring of the obscure buttercup by DNR staff and volunteers. Data from these efforts can be made available upon request.

The Preserve is open to pedestrian access on the main road. Visits are coordinated with DNR's Natural Areas staff. Columbia Hills State Park, located immediately adjacent to the NAP, provides additional public use opportunities.

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WASHINGTON STATE DEPARTMENT OF
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EDUCATION FIELD PHOTO BY KRISTINA PROSZEK. PRINTED ON RECYCLED PAPER. DNR CPD JOB. 6/05

Columbia Hills Natural Area Preserve

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

Natural Area Preserves are incredibly valuable native systems that may be key to a healthy future for our state.

These preserves are islands of diversity. They hold invaluable information about native ecosystems that have existed for hundreds or maybe thousands of years. Research helps us understand the inter-relationships of the plants and animals within these ecosystems. This information helps us make wise and informed decisions for managing the natural areas, as well as the rest of the lands we manage.

We at DNR are pleased to be able to offer educational opportunities for students, young and old alike, for today and forever.

Doug Sutherland

DOUG SUTHERLAND
COMMISSIONER OF PUBLIC LANDS

TOP AND COVER PHOTOS BY LAURA APPLEGATE; NORTHERN HARRIER © 2005 TOM GREER

Protecting Washington's Largest Population of Three Rare Plants

Located 17 miles southwest of Goldendale, along the Columbia River Gorge, sits Columbia Hills Natural Area Preserve (NAP). At 3,600 acres, it is the state's largest NAP. Columbia Hills NAP was established in 1993 after being identified by the Washington State Natural Heritage Program as a priority for protecting Washington's largest populations of three rare plants: obscure buttercup (*Ranunculus reconditus*) — state endangered, Douglas' draba (*Cusickiella douglasii*) and hot-rock penstemon (*Penstemon deustus var. variabilis*), both state threatened. The NAP also supports the largest known high-quality examples of two plant communities: Idaho fescue-houndstongue hawkweed grassland (*Festuca idahoensis-Hiercacium cynoglossoides*) and Douglas' buckwheat / Sandberg's bluegrass scabland (*Eriogonum douglasii / Poa secunda*).

▼ Northern Harriers (*Circus cyaneus*) can often be seen hunting for small mammals in the grasslands.

Left: Hot-rock penstemon (*Penstemon deustus var. variabilis*).
Right: Porcupine (*Erethizon dorsatum*).
Below: Douglas' draba (*Cusickiella douglasii*) — state threatened.

HOT-ROCK PENSTEMON AND WESTERN RATTLESNAKE PHOTOS BY CHRISTOPHER CHRISTIE; DOUGLAS' DRABA BY DAVID WILDERMAN
PORCUPINE PHOTO BY GERALD AND BUFF CORSI © CAL. ACADEMY OF SCIENCE

BUTTERCUP MONITORING PHOTO BY KRISTINA PROSZEK

Wildlife

Columbia Hills NAP is home to a variety of wildlife species including: mule deer, porcupines, Douglas tree squirrels and coyotes. Large numbers of bird species, including neotropical migrants and raptors, nest and feed in the various habitats within the Preserve.

East meets West to make a home for rare plants at Columbia Hills

Climate

The climate and geology of the Columbia Gorge have created unique growing conditions where certain plant species migrating between east and west have found a niche. These endemic plant species, such as the obscure buttercup (*Ranunculus reconditus*) are not found anywhere else in the world.

The Columbia Hills (highest point: 3,200 feet) are at the extreme western edge of the Columbia Plateau, a region characterized by arid lands with native shrub-steppe and grassland vegetation. Immediately to the west, the lower slopes of the Eastern Cascades have a wetter climate and forest vegetation characterized by Oregon white oak, ponderosa pine, and Douglas-fir, among others. Columbia Hills NAP is the transition between these two regions, resulting in a complex mix of climates and vegetation.

▲ Western rattlesnakes (*Crotalus oreganus*) hibernate in rocky dens starting in October and emerge in the spring.

Cultural History

American Indians and early settlers were attracted to the abundance of natural resources found within the greater Columbia Hills area. Archaeological evidence suggests that people came to hunt, fish, trade and live along the Columbia River, below the Columbia Hills. Travel routes through the Columbia Hills linked traditional use areas in the north with the Columbia River to the south.

Timber and vast expanses of grazing land brought homesteaders to the area during the middle and late 1800s. The Columbia Hills Natural Area Preserve is the northernmost part of what became the Dalles Mountain Ranch. The ranch was gradually assembled by combining 42 parcels of land from 23 original landowners. The southern portion of the ranch is now managed by Washington State Parks.

▼ Buttercup monitoring at Columbia Hills. Monitoring helps determine whether the plant population is increasing, decreasing, or staying the same.

Columbia Hills Geology

The bedrock beneath Columbia Hills NAP consists of Columbia River basalt lavas, which erupted from fissures located where Washington, Oregon, and Idaho meet. These basalts began erupting 17.5 million years ago and continued until 6.5 million years ago. Some of the lava flows within the NAP are as much as 200 feet thick. After the Columbia River Basalts quit erupting, the area was compressed from the north and south, resulting in the formation of the Columbia Hills.

After the Columbia River basalts quit erupting, the area was compressed from the north and south, appearing from space as a giant rumpled carpet.

Catastrophic glacial outburst floods from glacial Lake Missoula, among others, repeatedly scoured the Columbia Gorge along the south side of the NAP. The glacial floods stripped away soil and sedimentary units along the Gorge, leaving towering cliffs, small mesas, enclosed basins, and vistas of bedrock, all of which can be been seen from the Columbia Hills NAP. The last flood swept the area about 12,700 years ago. Erosion has exposed a sedimentary layer of clay and sandstone which supports strips of lush vegetation and allows groundwater to come to the surface, forming springs.